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ABSTRACT

Using a large, preexisting miscue analysis database, a study explored the influence of specific text characteristics on reader/text interaction. Subjects--24 second, 32 fourth, and 32 sixth graders--read three texts. Four specific questions were addressed: What relevant miscue patterns do the readers of each text and of the combined three texts demonstrate? How do these patterns relate to syntactic, semantic, and pragmatic views of determiners' referential functions? What do these patterns show about how readers process the relational aspects of noun phrases? Are these patterns consistent with a transactional, psycholinguistically based theory of reading? The distribution and miscue patterns of the major determiners of English and the deictics "this," "that," "these," and "those" were examined, as were the following miscues regarding the occurrence of "the" and "a/an": (1) articles for articles, (2) article/quantifier, (3) article/possessive, (4) article/deictic, (5) article/pronoun, (6) article/conjunction, (7) article/preposition, (8) omissions and a insertions, and (9) other. Overall, results indicated that the general functions of the determiners and their specific functions in particular text sequences strongly constrained miscues. In addition, miscue patterns revealed the readers' effective control of the syntactic, semantic, and pragmatic rules for the use of determiners and how determiners relate to noun phrases. (Information about the miscue database is appended.) (JD)

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TEXT FEATURES AS THEY RELATE TO MISCUES: DETERMINERS

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Prologue

This is one of a series of studies in which a large preexisting miscue analysis data base is used to explore the influence of text characteristics on the transactions between the text and readers during reading.

Miscue analysis was developed as a system for analyzing the points in oral reading where observed and expected responses do not match. Readers' miscues were used to understand the reading process and to develop a model and theory of that process. The focus of miscue research has until recently been on the readers, and in fact adaptations of the research analysis have been extensively used in diagnosis of readers' strengths and weaknesses and in planning instruction.

By reworking the data base so that all miscues produced by all subjects at all points in the text are analyzed, the focus can be shifted to the text and the characteristics of the text may be considered from the point of view of the miscues they are involved in. This makes it possible to study the influence of specific text features on readers without the construction of artificial texts and the imposition of unnatural conditions on the readers.

This study deals with an aspect of texts that Halliday has labeled referential cohesion. It is a companion to a study (Goodman and Gespass, 1983) that deals with pronouns. This study deals with THE and A/AN, the articles or major determiners of English and THIS, THAT, THESE and THOSE, which are often called demonstratives and we will call deictics (pointers).* Some less frequently occurring determiners are also examined. Together these two studies provide a rather complete picture of how reference and relationship are established by readers in transactions with texts.

A transactional, psycholinguistic view of the reading process provides the theoretical framework for these studies and for the interpretation of the results. In this view reading is considered a constructive process in which both the text and the reader are changed in the process of reading. The reader constructs a new text parallel to the published text. Thus there are two texts to be considered, the published text and the reader's text. Reference, for the reader is in the reader's text.

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*The terms, such as articles, determiners, demonstratives, quantifiers, etc. used in discussing the phenomena in this report come from a variety of sources. The differences in meanings of the terms come from different theoretical views and traditions in different disciplines. This report seeks to be consistent in use of terms and to define by example where terms are used.

A Few Little Words

THE is the most common word in the English language. A (with its prevowel alternate AN) is also very common. These words are common because of the way that the English noun phrase is constructed and because of the roles they play in making texts cohesive. The roles these little words play, along with a few other less frequent words, seem on first glance to be trivial particularly since these words are relatively devoid of any definable meaning. Yet the system of their use is highly complex and they are very useful to readers and writers as they construct texts and communicate through them.

Martin's simple definition of a text will help to put into context the text functions of these important little words: "Text is formed as speakers exchange meanings." (Martin, 1978) In texts speakers/writers are trying to tell their listeners/readers what they want them to know on the basis of what they assume they already know. All languages must have structures and devices for reminding readers and listeners what they already know as they are presented with new information. Reference to people, places, events, ideas, and things must be established and maintained throughout the text. In English each noun phrase is structured so that it either presents information or presupposes it. The determiners are key elements in these structures indicating whether new or presupposed information is involved.

Stenning(1979) adopts a pragmatic view of the type of text relations involved in articles which "seeks to relate phrases through their relations to objects in the domain of interpretation". He redefines the pragmatic relation as one between "phrases, statements, and objects not a semantic property of sentence types". That means that whatever relationships articles indicate are particular to particular contexts within texts.

As readers establish the text relations, they utilize the system of determiners that the published text provides and their knowledge of the system. Their miscues reflect and reveal the use they make of the system. Because this noun structure system is so significant we would expect the miscues to be highly constrained and to be broadly predictable in relationship to how the noun phrases are structured and how they are used.

Goodman and Goodman(1981) indicate that miscues can be either schema driven in the sense that they show the reader's use of an established schema to process text features such as noun phrases or schema forming in the sense that the miscues show readers using text features such as definite and indefinite articles to form a schema.

Purposes of the Study

This study begins with an examination of the distribution of THE

and A/AN in three texts. Then it examines the miscues produced on each text by 24 second graders, 32 fourth graders, and 32 sixth graders respectively. It also examines the distribution and miscue patterns of deictics: THIS, THAT, THESE, and THOSE in the three texts. Through the examination of these miscue patterns the following questions will be addressed:

1. What relevant patterns of miscues do the readers of each text and of the three texts combined show?
2. How do these patterns relate to syntactic, semantic and pragmatic views of the referential functions of determiners?
3. What do these patterns show about how readers process the relational aspects of noun phrases?
4. Are these patterns consistent with a transactional, psycholinguistically based theory of reading?

An Integrated Pragmatic-Grammatical View of English Determiners

To provide a base for understanding determiners in English texts this study draws on a "pragmatic componential analysis" provided by Martin(1978) which expands on the view of Halliday and Hasan(1976). Martin's focus is on what a speaker (or writer) can do with the language. But as Martin warns:

> ...it is essential here to keep an eye on the grammar at the same time as looking to the contexts in which English is used. It is the context which tells us that the definite article is used in different ways in English...But it is really the grammar of English which helps us to recognize the difference ...Languages are structured to do things; they do not simply do things. Speakers do not simply use language; they use the structures they've got. (p 27)

Readers, like speakers, do things with texts. And in doing these things they use language structures. We'll explore the grammar of the determiner in the noun phrase before we return to Martin's pragmatic analysis.

The Grammar of Determiners

Quirk and Greenbaum(1973) provide a paradigm of English noun phrase structures. They begin by defining 3 classes of nouns. Examples are from the three texts in this study: S44,a second grade story; S51,a fourth grade story; S53, a sixth grade story.

1. Proper nouns: Usually these have no determiner.
Example: Poor FREDDIE was in trouble again.

2. Count nouns: These are countable and so they have singular and plural forms. THE and A may occur with singular count nouns. THE

or null articles may occur with plurals.
Examples: We get A GOOD EDUCATION in our school. And they encourage special PROJECTS.

3. Non-count nouns: THE and SOME may occur with non-count nouns.
Example: ...playing on THE GRASS

Some nouns like FUR can occur as both count and non-count or mass nouns. If the reference is to distinct items then A or THE FUR or THE FURS occur but if the reference is to a mass as in,"...that spot of black FUR," then it is a non-count noun.

As noted above proper nouns do not normally take determiners. Quirk and Greenbaum identify 6 classes of determiners as they relate to singular or possessive count nouns and to non-count nouns.

A. All three noun classes: THE, Possessives, WHOSE, WHICH, WHICHEVER, WHAT, WHATEVER, SOME (Stressed), ANY (Stressed), NO
B. Plural count and non-count: null article, SOME (unstressed), ANY (unstressed), ENOUGH.
C. Singular count and non-count: THIS, THAT
D. Plural count: THESE, THOSE
E. Singular count: A/AN, EVERY, EACH, EITHER, NEITHER
F. Non-count: MUCH (p. 62)

Article use is dependent on whether reference is specific or generic and definite or indefinite. Here are examples from the texts used in this study:

Generic reference for count nouns uses A or THE for the singular and null for the plural:

... mixing THE STRANGE and THE UNKNOWN
It was enough to wake THE DEAD
... A FELLOW has to work off steam once in a while
Might as well study WORD MEANINGS first

Generic non-count nouns take only null form:

... nothing to do with CHEMISTRY.
So education it was!

Nouns with both definite and specific reference take THE with all three classes:

Singular count: ...in THE ROOM where your baby brother is sleeping...
Plural count: It helps me to remember THE WORD DEFINITIONS...
Non-count: He looked at the butter

Nouns with specific but indefinite reference choose A for

singular count nouns and SOME or null for plural and non-count.

Singular count: It will be A LIVE SHOW
Plural count: We could take SOME MOVING PICTURES
We're setting up LIGHTS AND CAMERAS
Non-count: There was a blast of MUSIC

We must make SOME ALLOWANCE for experiments ...

In a companion report on pronouns Goodman and Gespass (1983) showed how possessives do not occur with other determiners:

FREDDIE'S mother was angry.
Not: *THE FREDDIE'S mother was angry.
HIS FATHER said.
Not:*THE HIS FATHER said.

Nominative and objective pronouns do not take articles:

I was only washing the doll to make IT look like new.
I guess YOU did.

A small number of common count nouns take null articles:

at BREAKFAST to get SUPPER ready

Deictics THIS and THAT occur in the place of articles with singular count nouns:

They impress my mind better THAT way.
Where can I see THIS baby brother of yours?

THESE and THOSE occur in place of articles with plurals:

You should see THOSE prizes

THIS, THAT, THESE, and THOSE like other determiners (but not articles) can occur as pronouns too:

I don't know about THAT
THAT'S all. THIS will make a nice start ...
I'll keep THIS ... I would like to win one of THOSE.

The Pragmatics of Determiners

With this grammatical framework we can now consider Martin's pragmatic framework. Martin describes noun phrases which presuppose information in discourse as PHORIC and phrases which do not presuppose as NON-PHORIC.

Indefinite nouns are non-phoric. Definite nouns are made definite by some presupposed information and are therefore phoric. If noun phrases presuppose participant identity as in THE BABY, THAT BABY, or HE they have REMINDING PHORICITY. Other noun phrases have RELEVANCE PHORICITY because they presuppose the identity of participants related to the one referred to:

"Where are you?" he shouted.
"In THE hall closet" came Elizabeth's tearful reply.
"THE door blew shut. It's stuck.

In this sequence both closet and door are used for the first time in the text but THE is used rather than A because houses have hall closets and closets have doors. This information is presupposed and both are treated as definite. Elizabeth wants her location to be definitely established.

Reference may be to either the cultural or situational context in a speech act. If the reference is cultural what is presupposed is stored knowledge. Here's an example from S44, our second grade text:

"May we take pictures and send them to the contest?"
"Yes," answered Mrs. Jones. "I'll get THE CAMERA now.

Though this is the first time CAMERA occurs in the text the definite article THE is used. That's because the author presupposes that readers will know that pictures are taken with cameras and that families generally have only one camera. This latter type of exophoric reference Martin calls HOMOPHORA.

Situational context reference may be either endophoric, that is within the linguistic text or exophoric, relating to the context of the speech act or literacy event. EXOPHORA in written texts often involves direct quotation:

I'm going to drop THIS LIGHT down to YOU.

In the example above I and YOU have their coreferents not in the text but in the participant roles in the speech act the author is representing. The reference for THIS LIGHT is also in the speech act since THIS is pointing to something both speakers could see and experience in the situational context. Otherwise A, or THE would be used.

Endophoric reference may either be preceding (ANAPHORA) or following (CATAPHORA).

Most endophoric references are anaphoric because usually the coreferent precedes the phoric element in the text. But the coreferent can follow:

You just happen to do your studying in THE ROOM where your baby brother is sleeping.

In the example above, THE is cataphoric relating to the modifying element (WHERE YOUR BABY BROTHER IS SLEEPING) in the same noun phrase. According to Halliday and Hasan this is the only forward reference use permitted for THE. (p 72)

Since A/AN is used in indefinite noun phrases it is never phoric. That leads to a common oversimplification of the phoric role played by THE. As Halliday and Hasan put it:

> There is a commonly held belief that the typical function of THE is the anaphoric one: that it invariably specifies by reference back in the text. Indeed it has sometimes been referred to as the second mention article. It should be stressed, therefore, that anaphoric reference is only one means whereby THE achieves specificity (and even when it is anaphoric, more often than not there is no second mention of the same noun). It is probably true that purely anaphoric reference never accounts for a majority of instances: in pragmatic speech THE is primarily exophoric, and in most varieties of spoken and written English its predominate function is cataphoric. (p.73)

Here are some examples from S51 where the anaphoric uses of THE do not involve second mentions of nouns. Numbers indicating page and line in the original text precede each cited line (i.e. 215 is page 2 line 15):

215 "I want you to save half your allowance for it each week."
219 After THE cut in his allowance ...

Lines 317 to lines 403 describe Freddie's deciding to fix an alarm clock, his fixing it without telling anyone, and his anticipation of his parents' response when they find out what he has done.

404 At supper he was careful not to speak of THE secret ...

---

407 That night Freddie dreamed that his teacher was talking ...
409 THE dream was so strange ...

---

725 "Wait until you hear what happened."
726 Mr. Miller heard THE story three times-...

In our stories there are more exophoric uses of THE than anaphoric or cataphoric. Furthermore, most of the anaphoric uses of THE are multiple references to exophoric entities. For example the

first reference to each of these entities uses THE because they are homophoric, that is definite within the situational context:

...Mrs. Miller went to THE kitchen ...
...she opened THE refrigerator ...
..."THE alarm clock didn't ring

Subsequent references to these are anaphoric but remain exophoric as well.

Deictic determiners are not neutral with regard to whether information follows or precedes. THAT usually is anaphoric, preceded by coreferential information and THIS is usually cataphoric, followed by it. Examples:

Elizabeth's doll had turned green.
...."You've wrecked THAT doll.
Then one day .....
Later THAT day...
THIS is what she told her husband. "The worst smell!"
"Marionette dolls! exclaimed Sue. "I would like to win one of THOSE."

Deictics also relate pragmatically to nearness and farness with THIS and THESE being used for near referents and THAT and THOSE used for more distant ones.

I was hoping to win THIS year.
THAT night Freddie dreamed ...
THIS boy of yours is quite a businessman.
Bring THAT fine boy over here right away.

THIS and THESE may also be used to indicate that a participant has a major role in a discourse:

Where can I see THIS baby brother of yours.

When proper nouns occur in texts, since they are not phoric they do not signal whether they contain new information or old. Possessive nouns and pronouns relate nouns to other nouns but since they replace the articles they lose some of the phoric quality that the presence of the article provides. The possessive will occur with either new or old information. So the presupposed information provided by the use of HIS, THE, THIS, or A in the same phrase will vary considerably.

Halliday and Hasan group the definite article THE with other specific determiners including deictics and possessives:

> Essentially THE, like the demonstratives, is a specifying agent, serving to identify a particular individual or subclass within the class designated by the

> noun, but it does this only through dependence on something else- it contains no specifying element of its own...It merely indicates that the item in question is specific and identifiable: that somewhere the information necessary for identifying it is recoverable. Where is this information to be sought? Again, either in the situation or in the text. (p.70-71)

Readers are users of language. They must use their knowledge of the grammatical and pragmatic systems to infer cohesive relationships in order to construct their own sensible texts. As with pronoun relationships, the cues to these relationships vary considerably in how explicit they are. We can expect reader's miscues to reflect the inferences and predictions they are making as they transact with the text. We can expect readers to produce predictable miscues where the the text cues are ambiguous and to change the text to reflect inferences they have drawn. We can expect what they do with determiners to be constrained and far from random.

An Exemplary Passage

Figure 1

DETERMINERS AND RELATED FEATURES:
An Exemplary Passage from S51 Freddie Miller, Scientist

Note: Ø is used here to represent omissions. / indicates insertions.

```
601       At once Freddie set to work seriously at something he

                                                    to(c)
                                 and        Ø       he,Ø
0602 had started for fun. He ran to the cellar and picked up

    some                  ,and(4/1c)                    this,Ø
     a(10/1c)           and(2)                the(2c)  the(2)    3(1c/1uc)
0603 the  small battery/he had intended to use for his mother's(.)

        Ø(3)  this(c)                                      he,it,Ø     and(2/1c)
        and   the(8)      and(c)        others             and(2/1c) and(c) Ø
0604 bell. In his tool box he found another battery,  a ruler,/   a

         and,Ø(2)              and(4),Ø          that(c)
         ,a(4) and           and(4/1c)         of  a   a(3)
0605 coil  of / copper wire, / a small bulb /, and /  tape.
```

The section of text in Figure 1, above, provides a range of examples of phenomena relating to determiners. This passage will

serve to illustrate the phenomena we're examining here.

There are a series of noun phrases in the passage which involve THE, HIS, ANOTHER, A, and null as determiners:

602 THE cellar
603 THE small battery
603-4 HIS mother's bell
604 HIS tool box
604 ANOTHER battery
604 A ruler
604-5 a coil
605 of copper wire
605 A small bulb.
605 tape

In the second noun phrase, one subject substitutes SOME for THE which would indicate anticipation of a mass or plural count noun to follow. But 10 of the 32 subjects who read the text substitute A for THE with only one correcting. They are treating the noun phrase as indefinite which is consistent with the fact that no battery has been previously mentioned. THE here is cataphoric; the following clause makes the battery definite. But the relative WHICH is not present (WHICH he had intended) and A SMALL BATTERY sounds just as good.

It appears that A is substituted for THE as a result of subjects deciding they are dealing with an indefinite noun phrase. Otherwise other instances of THE would be as likely to show this shift. In contrast to this strong miscue shift from definite to indefinite article, there is only one miscue on THE before CELLAR, an omission. That was produced by a Maine subject and may represents a null form permissible in her dialect.

The two noun phrases with possessive HIS in the determiner position also show a contrast. There are two substitutions of THE and one of THIS for HIS before MOTHER'S. But before TOOL BOX there is one corrected THIS substitution and 8 THE substitutions. Shifts to THE before tool box lose the relationship to FREDDIE represented by HIS. That information is not lost when THE is substituted for HIS before MOTHER'S since there is only one mother in the text and the relationship is already well established. One subject substitutes MOTHER'S for HIS MOTHER'S shifting to a possessive proper noun with a null determiner.

There is no ambiguity about whom HIS refers to in either case. Subjects shifting to THE are rejecting the possession HIS attributes to Freddie. It appears that a fourth of our subjects can't accept the possibility that a boy can possess a tool box. What is presupposed by the writer does not match the cultural knowledge of at least some of the readers. At another text point 7 subjects replace HIS by THE in this sequence:

Freddie hurried to HIS cellar worktable.

The truth (to the reader) of a statement influences assignment and acceptance of text relationships.

Only one miscue involves ANOTHER BATTERY. One subject substitutes OTHERS for the two word phrase making the reference general but still indefinite.

The substitutions in the five noun phrases which follow on line 605 show a very different phenomenon. The readers are having some difficulty organizing the syntax of this string of noun phrases, a list of the things which were FOUND in HIS TOOL BOX. All of these are non-phoric noun phrases. Three use A as the article before indefinite singular count nouns. Two use null forms before indefinite non-count nouns.

Some subjects use AND to link the noun phrases. AND as a conjunction is a common way of linking two or more parallel syntactic elements which these non-phoric noun phrases are. AND is substituted for A twice before RULER (one correction). It is substituted twice before COIL (one correction) and inserted once before A COIL. AND is substituted for OF once before COPPER WIRE (thus making COIL and COPPER WIRE separate findings). AND is also inserted by 4 subjects before A SMALL BULB with no corrections. It is substituted for A before SMALL BULB 4 times with one correction. These interactions with AND involve both insertions between noun phrases and apparent substitutions of AND for A. The latter appears to be coincidental: AND is inserted between phrases while A is omitted. Two related but separable phenomena are happening at the same time.

A large number of miscues in these indefinite noun phrases involve A. A is omitted once before COIL. But A is substituted three times for OF before COPPER WIRE with appropriate intonation again making A COPPER WIRE another separate noun phrase in the series. Two additional subjects delete OF at this point in the text. A is omitted by one subject before SMALL BULB. It is inserted 3 times before tape. That shifts TAPE from a non-count to an indefinite singular count noun, which it could be. Note that there are no substitutions of THE for A in this series of indefinite noun phrases and only one shift from A to THAT. That one miscue, which moves to a definite noun phrase, is corrected. The readers seem to be aware that this is a string of indefinite noun phrases.

Miscue research requires each subject to retell the story after reading. Most subjects describe the making of the flashlight in considerable detail during their retellings. The miscues here seem to reflect the complexity of this particular syntactic structure but they do not seem to result in loss of cohesion or sense.

The passage also shows concern for coherence as demonstrated by other AND substitutions and insertions involving commas, period and subject HE. In line 602 AND was substituted for HE and further in the line HE replaces AND. In 603 AND is inserted twice before HE and substituted 4 times for HE. In line 604 AND is substituted for the period by 3 subjects and for HE by one who corrects. Three subjects insert a period after MOTHER'S with 2 attempting to correct.

At one point in the text 2 subjects substitute THE for USE. They must be anticipating a noun phrase they don't find. TO is treated as a preposition rather than a particle introducing an infinitive. Both correct. Similarly a substitution of TO for AND on line 602 is corrected. The subject may have anticipated an infinitive of purpose there.

All of these miscues show the subjects text construction at work. Though these substitutions, insertions, and omissions all relate to organizing this complex syntax, they involve shifts within the possible noun phrase structures and noun phrase sequences. They are certainly not random even in the instances where a fully acceptable structure does not result. Subjects seem to be concerned for cohesion and reference even in the miscues.

There can be no question that what is going on in the reading of this passage is an attempt by the readers to deal with text cohesion and noun phrase reference. Sometimes only one or two subjects show a particular response involving articles. But sometimes a sizeable percent of our readers do so at the same point. What is perhaps even more impressive in the miscues of these 32 subjects is what doesn't happen. There are no similar looking or sounding words substituted with little or no relationship to the syntax or meaning of the passage. There are no totally inexplicable miscues. The range of readers' observed responses is small. It's confined almost completely to elements which could fit the text the readers are constructing.

Several key points are demonstrated in this short passage.:

1. Miscues show strong use of the article system by readers and conversely strong constraints of that system on the readers.
2. Article miscues mostly involve a very small range of alternatives. These alternatives derive from a small number of syntactically and/or pragmatically related structures.
3. Miscue patterns involving articles are text specific; they reflect the features of the text surrounding the particular articles. So several readers may make identical miscues at a particular point in the text showing similar processing and inference in response to the text features.
4. Readers seem to be influenced by and concerned for both grammatical and pragmatic aspects of article use.
5. Patterns of correction reflect the readers' self monitoring and their concern for sensible text.

Frequency of Articles and Other Determiners

Table 1
Determiners
Frequency and Percent of Running Words
in Three Texts

	S44		S51		S53	
	F	%	F	%	F	%
A	14	1.9	29	2.0	65	3.1
AN	0	0	4	.2	5	.2
THE	43	6.0	78	5.6	82	3.9
SOME	0	0	1		3	.1
Tot.Art	57	7.9	112	7.8	155	7.3
THIS	7	.9	9	.6	9	.4
THAT	3	.4	5	.3	9	.4
THOSE	2	.2	2	.1	0	0
TOT.DEIC.	12	1.5	16	1.0	18	.8

Table 1 shows frequency and percent of articles and deictics in the three texts used in this study. There are similar proportions of articles in the three texts, 7.3% to 7.8%. The proportion of THE to A/AN uses in S44 and S51 are similar, about 6% of running words are THE and about 2% A or AN.

But S53, the sixth grade story, has an unusually high frequency of A/AN(3.3%) and low frequency of THE(3.9%) compared to the other two stories and to other texts examined in other miscue research. In six texts examined in a study of intratext word frequency (Goodman and Bird, 1982) occurrence of A ranged from 1.4% to 2% of running words. In two of those stories THE reached almost 10% of the running words.

The percent of running words that are common nouns for each story is 15.6% for S44, 14.2% for S51 and 14.4% for S53. Since THE and A will occur primary with common nouns, those percentages suggest that there are comparable opportunities for articles to occur in the three texts. But S53 is a first person narrative. It has more pronouns and less than half as many proper nouns as the other two texts. And it has 2.9% possessive pronouns as compared to 2.2% for each of the other texts. More possessive pronouns means fewer articles since both can not occur in the same noun phrases. The total percent of articles in the three texts would be very similar at just around 8% if there were not a higher rate of possessives in S53. If we combine the percents of articles and possessive pronouns that means that 4 to 5% of common noun phrases have neither articles nor

possessives.

It seems likely that the higher proportion of A and lower proportion of THE in S53 compared to other texts is due at least partly also to the first person use. But it probably also reflects other stylistic features that result in use of more non-phoric noun phrases .

THIS, THAT, and THOSE occur in noun phrases and as pronouns in the three texts. (THESE is not in any of the texts but it does occur in the miscues as a substitute for other text words) Deictics that occur in noun phrases also replace the article. But the figures above include their use as pronouns since the pronoun use could be regarded as deletion of a deep structure noun. Miscue patterns on both uses will be discussed later. THAT also occurs in S51 and S53 as a conjunction or clause marker. Those uses are not included in the numbers above but miscue patterns on them will be discussed later for the sake of comparison.

Miscue Patterns Involving THE and A

In the next section of this report we'll consider quantitatively the miscues on the articles in the data base produced by the readers of the second, fourth and sixth grade stories. It is important to keep in mind the points summarized from the depth analysis discussed above. A full picture of this aspect of how readers transact with text depends on looking at the data both quantitatively and qualitatively. The quantitative data for the group can show us the broad outlines of the phenomena involved but to fully understand those phenomena we need to look at particular text sequences and particular readers' miscues.

Since 32 fourth grade subjects in the study read S51, 3 sixth graders read S53 and 24 second graders read S44, the number of possible miscues on text articles is 32 or 24 times the number of occurrences of each in the text. That should be kept in mind as the actual miscue data is examined. There are few points in the text where the majority of the subjects do not produce the expected response. Ironically, there is more to be learned by analyzing the unexpected responses than the correct ones. One can never be sure what the reader has done in producing a correct response. But in comparing mismatches between observed and expected responses we can see what readers are doing. That in turn can shed light on how the correct responses are produced since there is no reason to suspect that the process is different in either case.

In addition, articles may be the observed responses in insertions and substitutions for other text words. There is no useful way of determining the number of opportunities for this latter type of miscue to occur.

Table 2
Miscues Per Hundred Words and Per Hundred Articles

Story	Total Words	Total Articles	Total Miscues	Article Miscues	MPHW* Per Subj	MPHA** Per Subj
S44	698	57	2867	61	17.11	4.46
S51	1369	112	5830	143	13.31	3.99
S53	2030	155	8790	188	13.54	3.79

*MPHW = Miscues per hundred words
**MPHA = Miscues per hundred articles

Table 2 shows that miscues are considerably less likely on articles in all three texts than on the text in general. In fact the miscue rate on articles is about one-fourth of the general rate for these subjects on these texts. Miscues on articles are less than half as common as they are on pronouns (including possessives). (Goodman and Gespass, 1983. p. 22) This is not a surprising finding. The articles are small common words. But the structures in which they are found, as was pointed out above, are not all that simple. So the low rate of miscues reflect strong control of the determiner system by our linguistically diverse subjects.

The rate of article miscues for the second graders reading S44 is slightly higher, 4.46, than the rate of fourth graders on S51, 3.99, or 6th graders on S53, 3.79. But these rates are remarkably similar particularly considering that the second graders overall MPHW was substantially higher than the fourth or sixth graders. There is nothing in these figures to suggest any important differences between age groups in dealing with articles. The articles are present in similar proportions and subjects produce similar rates of miscues on them.

In the examples provided from the protocols of multiple identical miscues the impression may be given that miscues occur at every instance in the text where A, AN, or THE occur. Table 3 demonstrates that there are many instances of these articles in all three texts where no subject makes a miscue. On the other hand, where miscues do occur they are likely to involve several subjects. Again this demonstrates the transactive nature of the process of reading. Every reader must transact with the characteristics of the published text within the constraints of the language. But what readers bring to the text is also part of the transaction. So the data shows variation within the constraints of the psycholinguistic process.

Table 3
Distribution of Miscues over Occurrences of A, AN and THE

	THE	A	AN
S44			
Instances without miscues	16	2	0
Instances with miscues	27	12	0
Total Instances	43	14	0
Mean Miscues per Instance With Miscues	2.26	3.25	0
S51			
Instances without miscues	17	3	0
Instances with miscues	61	26	4
Total Instances	78	29	4
Mean Miscues per Instance With Miscues	2.34	4.3	5
S53			
Instances without miscues	25	16	1
Instances with miscues	57	49	4
Total Instances	82	65	5
Mean Miscues per Instance With Miscues	3.29	3.0	3

Tables 4 and 5 present summary data on miscues by all subjects on THE and A. The tables show the two kinds of miscues discussed earlier: 1.FOR. Miscues where THE or A is expected response (ER) to the text which is either replaced by another word or omitted. 2. BY. Miscues where other expected responses(ER) are replaced by articles as observed responses (OR) or articles are inserted in the text.

In the tables miscues have also been categorized according to the grammatical function of the term substituted for the article or replaced by it. The proportion of all article miscues in each category is expressed as a percent of the total.

The data strongly demonstrates how highly constrained miscues on articles are. A very small set of words are substituted for or replaced by THE and A. Considering the words in the language this is indeed a small set. Virtually every one is a monosyllable. That shows graphic influences: subjects expect short words. But it also is due to the fact that the classes of words involved tend to consist mostly of monosyllables.

Table 4
Miscues with THE: Frequency and Percent

Type	S44 For f	S44 For % of Tot.	S44 By f	S44 By % of Tot.	S51 For f	S51 For % of Tot.	S51 By f	S51 By % of Tot.	S53 For f	S53 For % of Tot.	S53 By f	S53 By % of Tot.	Total For f	Total For % of Tot.	Total By f	Total By % of Tot.
Article	16	26.2	20	19.6	45	31.5	50	26.0	79	42.0	52	21.4	140	35.7	122	22.7
Quant.	0	0	1	1.0	1	.7	5	2.6	0	0	4	1.7	1	.3	10	1.9
Pron.	10	16.4	4	3.9	16	11.2	24	12.5	14	7.5	12	4.9	40	10.2	40	7.5
Pos. Pron.	7	11.5	15	14.7	12	8.4	39	20.3	32	17.0	39	16.0	51	13.0	93	17.3
Deictic	3	4.9	33	32.4	16	11.2	27	14.1	8	4.3	65	26.7	27	6.9	125	23.3
Conjunct.	3	4.9	7	6.9	11	7.7	10	5.2	9	4.8	30	12.3	23	5.9	47	8.8
Prepos. .	2	3.3	2	2.0	9	6.3	4	2.1	2	1.1	3	1.2	13	3.3	9	1.7
Other	7	11.5	11	10.8	2	1.4	6	3.1	3	1.6	0	0	12	3.1	17	3.2
Omission	13	21.3			31	21.7			41	21.8			85	21.7		
Insertion			9	8.8			27	14.1			38	15.6			74	13.8
Total	61		102		143		192		188		243		392		537	

A number of words substituted for or replaced by THE have graphic similarities to THE: THEIR, THEY, THAT, THOSE, THESE, THIS, THEN, HE, HER, SHE. That might suggest graphic reasons for substitutions. And indeed our theoretical perspective says that there are interactions with all cue systems; grapho-phonic, syntactic and semantic. Treating graphic similarity as a sole-cause or even major cause could not explain several things:

(a) Interactions with A as well as THE.
(b) Other dissimilar words (HIS for example) which appear in the miscues.
(c) Relative proportion of miscues involving each word.
(d) Variation of miscue frequency across instances.

Table 5
Miscues Involving A:Frequency and Percent

Type	S44 For f	S44 For % of Tot.	S44 By f	S44 By % of Tot	S51 For f	S51 For % of Tot	S51 By f	S51 By % of Tot	S53 For f	S53 For % of Tot	S53 By f	S53 By % of Tot	Total For f	Total For % of Tot.	Total By f	Total By % of Tot.
Article	20	51.3	16	48.5	50	44.6	44	49.4	51	34.7	78	46.2	121	40.6	138	47.4
Quant.	0	0	1	3.0	0	0	2	2.2	0	0	0	0	0	0	3	1.0
Pronoun	1	2.6	1	3.0	6	5.4	4	4.5	12	8.2	14	8.3	19	6.4	19	6.5
Pos.Pron.	0	0	3	9.1	7	6.3	2	2.2	23	15.6	10	5.9	30	10.1	15	5.2
Deictic	0	0	1	3.0	1	1.0	2	2.2	0	0	2	1.2	1	.3	5	1.7
Conjunct.	3	7.7	1	3.0	7	6.3	6	6.7	9	6.1	20	11.8	19	6.4	27	9.3
Prepos.	8	20.5	2	6.1	7	6.3	8	9.0	11	7.5	9	5.3	26	8.7	19	6.5
Other	1	2.6	1	3.0	1	.9	4	4.5	2	1.4	2	1.2	4	1.3	7	2.4
Omission	6	15.4			33	29.5			39	26.5			78	26.2		
Insertion			7	21.2			17	19.1			34	20.1			58	19.9
Total	39		33		112		89		147		169		298		291	

Seven categories, excluding omissions and insertions, account for all but a very few of all miscues involving articles. All of the categories except pronouns are function words. That means that nouns, verbs, adjectives and adverbs are almost never interchanged with articles in miscues.

Of the six function word categories four are also determiners: Other Articles, Quantifiers, Possessive Pronouns, and Deictics. Together these account for 51.3% of miscues on A as ER and 60.5% of those with A as OR in S44. For S51, determiners account for 51.9% and 56% of the miscues on A. For S53, these figures are 50.3 and 53.3%. Figures for THE in S44 are 42.5% and 66.7 for S44. In S51 determiner miscues on THE are 51.2% and 61%. And for S53 they are 63% and 64.1%. The figures vary within a range around half of all the miscues. Any syntactic change such miscues involve would be within the noun phrase but cohesive and pragmatic relationships could be changed by such miscues. The fact that so high a proportion of miscues on articles involve other determiners is itself strong evidence of the control

readers have over these text features and the strong constraints English noun phrase constructions provide for the readers.

Quantifiers, (principally cardinal numbers) have been shown as a separate category here because they comprise a category of miscues on articles that could be important but isn't. One view of determiners is that they are all forms of quantifiers. (Stenning, 1979). A/An historically derived from ONE, and ONE still functions as an article in the Hawaiian Pidgin spoken by some of our subjects. Yet there are very few miscues involving articles replacing quantifiers and only one in the three texts of a quantifier replacing an article. Partly that may reflect the small number of quantifiers in the texts. But it also seems to reflect little tendency for our subjects to treat articles and quantifiers as interchangeable.

Omissions and insertions comprise much higher proportions of article miscues than general miscues. In the larger study, these subjects' proportions of all miscues that are omissions are 12.2% on S44, and 10.4% on both S51 and S53. Insertions for the same groups are 3.7%, 3.9%, and 4.1% of all miscues for the respective texts. As Table 4 shows, about 21% of miscues on THE are omissions in all three texts. Insertions of THE are 8.8%, 14.1%, and 15.6% of miscues on THE in the respective texts. Omissions are 15.2% of the miscues on A in S44 , 29.5% of S51, and 25.5% of S53. Insertions of A are 21.2%, 19.1%, and 20.1% respectively.

These omission and insertion figures reflect several factors which will be better illustrated later when they are discussed with examples. A key factor however, is that English noun phrases sometimes use null determiners. That means that inserting or omitting articles may result in a syntactically acceptable noun phrase with changed cohesive and pragmatic relations.

The patterns of miscues on A and THE are similar in that they involve the same categories but they differ in the proportions of miscues involving each category.

Almost half the miscues involving A in the three texts are other articles, chiefly THE. That compares with 26-42% of miscues on THE in which A is substituted for THE and 20-26% of the miscues with THE as the OR in which A is the text word replaced by THE. This disproportion mainly represents more tendency for readers to interchange THE with other determiners that keep the noun phrase definite than to interchange such determiners with A which would represent shifts from indefinite to definite noun phrases.

The figures on S53 stand out in one respect in Table 4 and 5. 42% of the miscues on THE in S53 involve substitution of A, much higher than for the other two texts. At the same time only 34.7% of the miscues on A in S53 involve THE. The most likely explanation of this difference is the unusually high proportion of A to THE in

that text. Either the style or frequency or both seem to be causing subjects to shift more to A and less to THE in S53 than in the other texts.

Possessive pronouns are more likely to involve miscues with THE than A. This is consistent with what was said above about staying within definite noun phrases. There is even more striking evidence with deictics, (THIS, THAT, THESE, THOSE). Shifts, particularly from deictics to THE, are very common but there are only scattered interactions between deictics and A. One could argue that graphic similarity plays a major role in these differences. THE looks more like THAT and THIS than A does. But that would not explain the frequent interaction of A and THE and the infrequency of A and THIS or THAT. Graphic similarities certainly play a role in miscues but it must be a minor one considering how constrained article miscues are.

These overall figures tell part of the story that readers' miscues reveal about how readers process articles and noun phrases and the passages in which they occur. But to see this process in true perspective we need to examine examples of the miscues summarized in each category. In the following section we'll look mostly at examples where a strong reader-text transaction is reflected through several readers making identical miscues at the same point in the text. And we'll also consider self-correction rates since they show a lot about readers awareness of the effects of their miscues.

The OTHERS

Table 6
Miscues Involving "OTHERS": Frequency and Percent of Correction

Text	For THE			By THE			For A			By A		
	f	c	%	f	c	%	f	c	%	f	c	%
S44	7	3	43	11	4	36	1	1	100	1	0	0
S51	2	0	0	6	1	17	1	1	100	4	2	50
S53	3	3	100	0	0	0	2	1	50	2	1	50

The category labeled OTHERS includes all miscues that do not fit into the seven categories specifically labeled. This category is as remarkable as any of the others, if only because of the very small number of scattered miscues that need to be treated as miscellaneous. Only in S44 is the percent of the whole above 10% for miscues involving THE. (See Table 4) Only a handful of miscues in the three texts on A are in this group.

It might seem that our second grade subjects higher percent of "OTHER" miscues on THE could indicate less control over articles among younger pupils. But all 7 of the miscues on THE are identical

substitutions of SAID in this text sequence:

701 "Who took it?" Mr. Vine asked.

SAID(7,3 corr.)
702 "Our Kitten!" THE Jones children said.

In this passage, THE occurs before a proper noun. That's only because of the unusual use of the name as a noun adjunct to a head noun which is a common noun, CHILDREN. Furthermore that noun phrase occurs in a dialogue carrier in an OBJECT, SUBJECT, VERB sentence. Seven of the 24 readers of this text have rejected the definite article before the proper noun and transformed the sentence so the verb SAID follows the direct quotation. A strong prediction of a likely structure has dominated over an unexpected structure. However the readers are self-monitoring and three of the seven self-correct their miscue.

Self-correction by the readers of the miscues in this group is higher than average for miscues involving articles and considerably higher than the correction rates for all miscues. That's as expected. These miscues involve substantial shifts in syntactic and semantic structures and are more likely to be disconfirmed by other text information and corrected.

The sequence above demonstrates how the response of readers to specific text structures can seem to deviate from general patterns and yet be quite consistent with those patterns. The readers who produce SAID for THE are responding to the same constraints as those who read THE correctly. The data in Tables 4 and 5 summarize the miscue data but there are strong, text-specific patterns which can make clear how readers are transacting with text structures involving articles and other determiners.

The data here underscores 2 other important concepts:
1. What doesn't happen in reading is as significant as what does. The total possibilities of interactions between articles and other English words are virtually endless. Yet such interactions in miscues are actually very limited.

2. Minor phenomena may be infrequent but still be important in demonstrating the constraints on article use.

Articles for Articles

Table 7
Article for Article Miscues: Frequency and Percent of Correction

Word	For THE			By THE			For A			By A		
	f	c	%	f	c	%	f	c	%	f	c	%
S44												
A	16	4	25	20	3	15						
THE							20	3	15	16	4	25
TOTAL	16	4	25	20	3	15	20	3	15	16	4	25
S51												
A	42	3	7	50	6	12						
AN	2	1	50							1	0	0
THE							50	6	12	42	3	7
SOME	1	0	0	0	0	0	0	0	0	1	0	0
TOTAL	45	4	9	50	6	12	50	6	12	44	3	6
S53												
A	78	11	14	50	6	12						
AN	1	1	100	1		0						
THE							50	6	12	78	11	14
SOME				1		0	1		0			
TOTAL	79	12	15	52	6	12	51	6	12	78	11	14

It's not surprising that a large proportion of miscues on articles involve substituting other articles. As Table 7 shows, these are basically A for THE and vice-versa but there are scattered examples as well involving AN and SOME. Not included in Table 7 are examples of shifts to and from null articles because those are treated under insertions and omissions.

The shifts between A and THE involve shifts from phoric definite noun phrases to non-phoric indefinite noun phrases and the reverse. That means that reference for the noun phrase could be changed. It was indicated above that about half of all miscues on A are interchanges with THE, that is shifts to definite phoric phrases. In the exemplary passage cited earlier, 10 subjects said A SMALL BATTERY rather than THE SMALL BATTERY. In this instance THE is cataphoric, the noun phrase is only definite because it is made specific by a modifying clause which follows: HE HAD INTENDED TO USE FOR HIS MOTHER'S BELL. Though the use of THE cataphorically foreshadows the information which follows and which makes the noun phrase definite, its use is not obligatory in English. So no meaning is ultimately lost by the shift to A reflecting the readers' shift to an indefinite noun phrase.

In the same story this example of a shift by several subjects from A to THE occurs:

THE(9)

0524 "Listen, Elizabeth," he called. "I'll fix A light
and drop it to you...

The shift here is from an indefinite nonphoric A LIGHT (which subsequently turns out to be the homemade flashlight Freddie makes later) to what Martin calls homophoric THE. Though no light has been mentioned in the text, parts of houses, including dark closets (where Elizabeth is) have lights. So the readers assume this light is the one made explicit by the situation and thus use a definite article. The readers' common inference (made by 9 of 32 readers) is that if somebody's stuck in a closet someone should turn on or fix THE light.

Here's another homophoric example:

THE(5)

506-7 Mrs. Miller had gone to visit A neighbor.

The readers' substitution of THE means this is not just any neighbor but one particular one made definite by the usual situation of living arrangements.

Still another example occurs in the same story:

THE(12/3 corr.)

220 ... safely outlined in A library
221 book.

Here readers shift to THE library, since each community usually has only one. They have not anticipated that LIBRARY is a noun adjunct since BOOK begins the next line. Three of the 12 who make this miscue recover and correct.

Here's an opposite example from S53:

912 "In five minutes we

A(8,1 corr.)

913 go on the air," he said, "with THE typical baby....

Readers who substitute A for THE here have missed a subtle point. This is not just any TYPICAL BABY. This is THE TYPICAL BABY.

As Table 7 indicates corrections on article for article miscues are not very high, below the mean correction rate for all miscues in each of the stories. Readers tend to correct when miscues produce conflicts and incomprehensible texts. Some article for article miscues do that (the library book example for instance) and when they do corrections are higher. Most of the article for article miscues

produce only subtle changes at the most and they are therefore not likely to be corrected.

Substitutions of articles for articles show clearly the readers' use of syntactic and pragmatic rules for generating definite or indefinite phoric or nonphoric noun phrases and thus they confirm the dual text view of the reading process. In constructing their texts, readers choose from the same grammatical and pragmatic rules which are available to the writers. Their choices, reflected in their miscues, show the meanings that are represented in the readers' texts.

Table 8
Article/Quantifier Miscues: Frequency and Percent of Correction

Word	For THE			By THE			For A			By A		
	f	c	%	f	c	%	f	c	%	f	c	%
S44												
ONE	0	0	0	1	1	100	0	0	0	1	1	100
S51												
ONE	0	0	0	4	2	50	0	0	0	0	0	0
ALL	1	0	0	1	0	0	0	0	0	2	1	50
TOTAL	1	0	0	5	2	40	0	0	0	2	1	50
S53												
ONE	0	0	0	4	1	25	0	0	0	0	0	0
TWO	0	0	0	1	1	100	0	0	0	0	0	0
TOTAL	0	0	0	5	2	40	0	0	0	0	0	0

Article/Quantifier Miscues

As indicated earlier all but one of the miscues involving articles and quantifiers involve substitution of A or THE for the quantifier. A very high percent of this small number of miscues is corrected. Here are some examples of miscues involving quantifiers:

THE(1, 1 corr.)
S44:719 In ONE corner ...

THE(2, 1 corr.)
S53:817 ... along ONE side.

Another related type of miscue involves the unusual circumstance of THE occurring in a noun phrase before a quantifier. These would not show in the table above.

```
                Ø
S44 602  THE ONE of her playing
                  Ø(2, 1 corr.)
                      Ø(3, 1 corr.)
S51 609 ...THE TWO batteries

                                Ø(8,3 corr.)
                                    Ø(2)
S53 320  hanging up THE TWO telephones into which he'd
been talking.
```

In each of these some of the readers tend to omit either the article or the determiner. Their syntactic schemata seem to be causing them to reject the possibility of both being present in the same noun phrase. This is particularly true in line 320 of S53 where 8 subjects omit THE and two omit TWO. Two others reverse the words producing "hanging up TO THE telephones". THE in this noun phrase is cataphoric because the noun phrase is made specific by the modification which follows TELEPHONES. These examples demonstrate how the specific features of a particular text passage can involve a number of readers in what is otherwise a minor phenomenon.

One minor phenomenon is worth noting. ONE is an article in Hawaiian Pidgin, the equivalent of A. Some of the subjects in this study speak Hawaiian Pidgin as their first language:

He wen' get one battery. (Hawaiian Pidgin retelling)

Hawaiian subjects make these miscues:

```
                    THE(c)
S51 506   Then ONE afternoon.

            A
S44 501 ONE picture showed a large black crow
```

These miscues all are shifts by Pidgin speakers from ONE to THE or A, showing perhaps their expectations for a standard dialect in printed texts.

Miscues involving articles and quantifiers represent minor phenomena yet they are clearly consistent with other miscue data in showing the constraints on the readers handling of noun phrases.

Article/Possessive Miscues

Miscues involving possessives and articles include a range of possessives and both A and THE, though there are substantial numbers of miscues involving A and possessives only in S53, which, as was indicated earlier, has more instances of A in the text. In all three

stories, the largest number of miscues involve HIS. Corrections of possessive/article miscues are variable depending on the text in which they're found. That will be illustrated below.

Several miscues result in less specific reference which may reflect the issue raised earlier of pragmatic reasons why readers might reject the implicit ownership:

THE (8, 2 corr.)
S44 417-8 He printed them upstairs in HIS darkroom.

THE(9, 2 corr.)
S51 219 after the cut in HIS allowance, ...

THE(7)
507 hurried to HIS cellar worktable.

THE(8)
604 ...in HIS toolbox.

THE (8, 2 corr.)
S53 317-8 As the lady led me toward HIS office.

Table 9
Article/Possessive Miscues: Frequency and Percent of Correction

Word	For THE			By THE			For A			By A		
	f	c	%	f	c	%	f	c	%	f	c	%
S44												
HER	5	1	20	0	0	0	0	0	0	3	2	67
HIS	0	0	0	10	2	20	0	0	0	0	0	0
THEIR	2	0	0	5	3	60	0	0	0	0	0	0
TOTAL	7	1	14	15	5	33	0	0	0	3	2	67
S51												
HIS	11	1	9	39	4	10	5	0	0	1	0	0
YOUR	1	1	100	0	0	0	0	0	0	1	1	100
MY	0	0	0	0	0	0	1	0	0	0	0	0
HER	0	0	0	0	0	0	1	0	0	0	0	0
TOTAL	12	2	17	39	4	10	7	0	0	2	1	50
S53												
MY	4	2	50	9	4	44	5	1	20	2	1	50
OUR	4	0	0	0	0	0	0	0	0	0	0	0
YOUR	5	0	0	1	0	0	0	0	0	0	0	0
HIS	19	1	5	29	10	35	18	0	0	8	4	50
TOTAL	32	3	9	39	14	36	23	1	4	10	5	50

Several subjects treat DARKROOM as two words showing their lack of the concept that a darkroom is not any dark room. That shift may or may not compound the shift from HIS to THE. In the example from S53, lines 317-18, some readers may have rejected HIS because the sentence theme is feminine, though none shifted to HER.

Shifts from the article to the possessive seem to show the readers making the possession and reference more cohesive and making inferences more explicit:

HER(2) , A(1)
S44 411 ...playing with THE camera.

HIS (6)
S51 210 He was always like one of THE uncles.

HIS(3)
311...who was a real chemist with A company in Switzerland.

OUR(3)
S53 604 .... came to THE house.

A series of sequences in S53 show readers responding with relatively consistent shifts:

HIS (7)
606-7 He leaned over the crib and wagged A finger ...

HIS(3), YOUR(1), A(5, 1 corr.)
608 ...grabbing for THE finger.

HIS(7)
824 He wagged A finger at Andrew.

HIS(4), YOUR, A(2)
826-7 ...still holding THE finger over the crib.

The author uses the stylistic device of a finger appearing over the baby. Apparently some of our readers feel fingers must be attached to somebody. But notice that in some of these instances while some subjects are making the noun phrase more specific by replacing THE by a possessive, others are making it indefinite by substituting A. Perhaps THE FINGER sounds like it is the only one whereas A FINGER implies one of several, the usual case with fingers.

A story telling aspect seems to be involved in the following examples:

THE(3, 1 corr.)
S44 305-6 ...pictures of THEIR father.

THE
307-8 ...They took pictures of THEIR mother...

THE(3) THE(3)
S51 312 ... when HIS parents ... 403 ..to HIS parent's room

THE (5, 2 corr.)
S53 608 "Da", said MY little brother ...

THE (2, 1 corr.)
1128 ..., said MY baby brother.

In each case above the readers shift does not cause a loss of information since in the family there is only one mother, one father, one set of parents, one baby brother. And in stories these are sometimes referred to as THE MOTHER, etc.

In most of the cases of possessive/article miscues shown above changes of meaning, cohesion, and syntax still leave the reader with syntactically acceptable, comprehensible text. Correction is thus not required. Where it occurs it is either triggered by specific aspects of the surrounding text or by the reader discontent with some subtle inconsistency or both. That explains the variability of rates of correction, from almost none to quite high.

Table 10
Article/Deictic Miscues: Frequency and Percent of Correction

Word	For THE			By THE			For A			By A		
	f	c	%	f	c	%	f	c	%	f	c	%
S44												
THAT	0	0	0	13	2	15	0	0	0	1	1	100
THIS	2	1	50	20	10	50	0	0	0	0	0	0
THESE	1	1	100	0	0	0	0	0	0	0	0	0
TOTAL	3	2	67	33	12	36	0	0	0	1	1	100
S51												
THAT	14	6	43	13	7	54	0	0	0	1	0	0
THIS	2	0	0	13	3	23	0	0	0	0	0	0
THOSE	0	0	0	1	1	100	1	0	0	1	0	0
TOTAL	16	6	38	27	11	41	1	0	0	2	0	0
S53												
THAT	7	3	43	54	10	19	0	0	0	2	1	50
THIS	1	0	0	11	4	36	0	0	0	0	0	0
TOTAL	8	3	38	65	14	22	0	0	0	2	1	50

Article/Deictic Miscues

Use of THIS, THAT, THESE, and THOSE are termed deictic here because they have the common characteristic of pointing either forward or backward in the text or exophorically at something in the situational context. The full range of miscues on these deictic determiners will be discussed in greater detail later. Here we'll focus on miscues involving articles and deictics. The general effect of substituting a deictic for an article would be to make the noun phrase and cohesion more explicit. The opposite shift would have the opposite effect. Most of the instances where several readers make the same shift involve substituting THE for the deictic. Very few of these miscues involve A so they almost all stay within definite noun phrases.

Here are some examples, from all three texts, of shifts to THE from deictics:

```
                                        THE(5, 1 corr., 1 unsuc. corr.)
 S44 505 You can see every feather on THAT bird.

                                              THE (8, 4 corr.)
     602 It was on the roll next to THIS picture ...

                           THE(8, 1 corr.)
     605 Kitten took THAT picture.

                                   THE(8, 2 corr.)
 S51 302 ... something wrong with THIS dream.

                               THE(3)
     705 I'm going to drop THIS light ...

                THE(5, 1 corr.) THAT(1)
 S53 810 THIS baby is not typical.
```

The examples above tend to involve dialogue and the deictic reference is to something in the speech act, not in the published text. The exception is the DREAM example above where the coreferent is not a previous occurrence of DREAM as a noun but a whole prior idea represented by several lines of text.

In S53, there is a particular stylistic use of the deictic to provide emphasis which is involved at several instances in multiple miscues.

```
                      THE(3) THAT(1,corr.) HIS(1, corr.)
 527 Where can I see THIS  baby brother ...
```

THE(13, 4 corr.) A(2) Ø(1, corr.)
612-3 Be at the station with THAT fine baby ...

THE(14, 1 unsucc. corr.)
803 ...."Bring THAT fine boy over ...

THE(12) MY(1)
806 Get THAT baby over here.

In examples above, the deictic use is subtle and large numbers of subjects shift to a simple definite noun phrase not losing cohesion as much as the stylistic emphasis.

Another group of instances with multiple miscues involve use of deictics to make time phrases at the beginning of clauses:

THE(6, 3 corr.)
S51 301 Late THAT day ...

THE(4, 2 corr.)
714 THAT night...

THE(7, 4 corr.)
S53 603 THAT evening ...

These latter examples show high rates of correction indicating that the subjects expect the sentences to start with subject noun phrases rather than adverbials and correct when they realize their predictions are disconfirmed.

Another type of miscue involves predictions that a clause is beginning with THAT not as a deictic but as subordinate conjunction:

THAT(3, 2 corr.)
S51 324 As surely as he knew THE alphabet ...

THAT(4, 2 corr.)
411 "THAT wasn't the school bell,"said Mrs. Miller. "THE
412 alarm went off ...

Here's an example where the text is ambiguous and THAT could either be a deictic or clause marker. Six readers are treating THAT STUDYING as a noun phrase:

THE(6) Ø(1)
S53 702 I even found THAT studying made the time go
faster.

Overall, correction rates are high for miscues involving articles and deictics but as the examples show rate of correction in any instance depends on the text and type of phenomenon that triggers the miscues. In some types shown above correction rates are very low

and in some they are very high. This is another demonstration of the powerful constraints on reader-text interactions involving articles and the noun phrases in which they occur.

Other miscues on deictics will be discussed later.

Article/Pronoun Miscues

When a miscue involves an interchange of a pronoun with an article, it is because the reader is anticipating a common noun phrase where a pronoun occurs in the published text or vice-versa. Common noun phrases usually start with articles. Such miscues are likely to result in disrupted syntax and are therefore very likely to be corrected when the reader realizes a conflict exists. In fact, as our data shows over half of all such miscues are corrected by all three grade groups. Totally, 52% of these miscues are corrected; that's a very high rate of correction; mean rate of correction for miscues on all three texts is less than 20%.

Almost all the pronouns involved are in subject positions which suggests that these miscues involve the readers' assignment or maintenance of theme or topic through a text sequence.

Several different pronouns and all three pronoun persons are involved. HE/THE and THE/HE substitutions are numerous, suggesting a graphic similarity factor, but examples occur of other combinations with no such similarity. Past studies have made clear that graphic similarity may compound semantic, syntactic, and pragmatic factors but it is not explanatory by itself. If it were, all instances of THE or HE would have equal probability of exhibiting such substitutions and the data does not show such distribution.

Both THE and A show pronoun interactions which means that both definite and indefinite noun phrases are involved. One factor that seems to trigger such miscues is prior text leading to prediction of a coreferential common noun phrase:

S44 109 Kitten Jones would not have changed her white fur

THE(2, 2 corr.)
110 coat for anything. And SHE always ...

THE(corr.)
406 Now SHE walked over to the camera.

THE(2, 1 corr.)
407 SHE began to sniff at IT.

Table 11
Article/Pronoun Miscues: Frequency and Percent of Correction

Word	For THE			By THE			For A			By A		
	f	c	%	f	c	%	f	c	%	f	c	%
S44												
I	1	1	100	0	0	0	0	0	0	1	1	100
YOU	0	0	0	0	0	0	1	1	100	0	0	0
HE	3	2	67	2	1	50	0	0	0	0	0	0
IT	3	2	67	1	1	100	0	0	0	0	0	0
THEY	3	1	33	1	1	100	0	0	0	0	0	0
TOTAL	10	6	60	4	3	75	1	1	100	1	1	100
S51												
I	1	0	0	0	0	0	0	0	0	0	0	0
HE	12	3	25	7	3	43	5	2	40	0	0	0
HIM	0	0	0	2	0	0	0	0	0	0	0	0
SHE	1	1	100	4	2	50	0	0	0	0	0	0
IT(subj)	1	1	100	9	5	56	1	1	100	4	3	75
THEY	1	0	0	2	0	0	0	0	0	0	0	0
TOTAL	16	5	31	24	10	42	6	3	50	4	3	75
S53												
I	1	1	100	0	0	0	11	7	64	7	3	43
ME	0	0	0	1	1	100	0	0	0	1	1	100
YOU	0	0	0	0	0	0	1	0	0	4	2	50
HE	6	5	83	10	4	40	0	0	0	1	1	100
IT	1	0	0	1	1	100	0	0	0	1	0	0
THEY	6	1	17	0	0	0	0	0	0	0	0	0
TOTAL	14	7	50	12	6	50	12	7	58	14	7	50

Another triggering factor is the readers' anticipation of a syntactic structure other than the author's:

I(3, 1 corr.)
S53 205 I guess A fellow has to ....

305 Suddenly I jumped from
I(6, 4 corr.) AND(1), 0
306 my chair, A wonderful idea implanted in my brain.

A few miscues, usually made by only one or two readers at any text occurrence, involve nominalized verbs in either the published or reader's text:

HE (6, 1 corr., 1 unsucc. corr.)
S51 219 After THE CUT IN his allowance,...

THE TAPE
607 HE TAPED ....

Pronoun-article miscues show prediction, inference, self-monitoring, and self-correction strategies at work.

Article/Conjunction Miscues

Table 12
Article/Conjunction Miscues: Frequency and Percent of Correction

Word	For THE			By THE			For A			By A		
	f	c	%	f	c	%	f	c	%	f	c	%
S44												
AND	3	1	33	2	1	50	3	1	33	0	0	0
OR	0	0	0	1	1	100	0	0	0	0	0	0
BUT	0	0	0	3	0	0	0	0	0	0	0	0
SO	0	0	0	0	0	0	0	0	0	1	1	100
THAN	0	0	0	1	1	100	0	0	0	0	0	0
TOTAL	3	1	33	7	3	43	3	1	33	1	1	100
S51												
AND	6	3	50	0	0	0	7	3	43	3	2	67
SO	1	0	0	0	0	0	0	0	0	3	2	67
THEN	3	0	0	0	0	0	0	0	0	0	0	0
WHEN	1	1	100	0	0	0	0	0	0	0	0	0
WHAT	0	0	0	4	2	50	0	0	0	0	0	0
TOTAL	11	4	36	4	2	50	7	3	43	6	4	67
S53												
AS	0	0	0	2	0	0	4	3	75	16	2	13
AND	7	5	71	26	4	15	5	2	40	3	2	67
OR	0	0	0	0	0	0	0	0	0	1	1	100
THEN	2	2	100	2	2	100	0	0	0	0	0	0
TOTAL	9	7	78	30	6	20	9	5	56	20	5	25

Miscues involving articles and conjunctions are most likely to involve AND and either THE or A. But there are examples in all three texts involving other conjunctions.

Miscues on conjunctions seem to be coincidental, but only in the sense that conjunctions occur at the beginnings of clauses where readers may be anticipating noun phrases. Conversely, where conjunctions replace articles it appears readers are anticipating new conjoined causes. Such patterns would suggest that readers will tend to correct such miscues as they disconfirm their predictions. And in fact correction rates shown in Table 13 are relatively high overall though they vary depending on specific text features. Here's an unusual instance, for example, where substitution of an article for a conjunction is not disruptive:

THE(3)
S51 715 BUT Kitten loved her ball ...

Most examples of such miscues do produce discontinuities however:

THE(3, 2 corr.)
S51 725 Wait until you hear WHAT happened ...

AND(3,1 corr.) AT(1 corr.)
S53 612 Be at the station with that fine baby A week from ...

1111-2 I remember cameras moving closer to the
THE(3, 2 corr., 1 unsucc. corr.)
crib AND Mr. Barnaby bending over and saying, ...

These conjunction-article miscues show readers' prediction of syntactic structures and the self-monitoring that accompanies prediction.

Table 13
Article/Preposition Miscues: Frequency and Percent of Correction

Word	For THE			By THE			For A			By A		
	f	c	%	f	c	%	f	c	%	f	c	%
S44												
TO	2	0	0	2	1	50	7	1	14	0	0	0
OF	0	0	0	0	0	0	1	1	100	2	1	50
TOTAL	2	0	0	2	1	50	8	2	25	2	1	50
S51												
TO	5	2	40	1	0	0	6	0	0	2	1	50
OF	0	0	0	0	0	0	0	0	0	3	0	0
IN	3	2	67	0	0	0	1	0	0	2	0	0
AT	1	0	0	1	0	0	0	0	0	0	0	0
WITH	0	0	0	8	1	13	0	0	0	1	1	100
TOTAL	9	4	44	10	1	10	7	0	0	8	2	25
S53												
TO	1	0	0	2	0	0	2	0	0	9	4	44
AT	0	0	0	0	0	0	9	5	56	0	0	0
ON	1	1	100	0	0	0	0	0	0	0	0	0
FOR	0	0	0	1	0	0	0	0	0	0	0	0
TOTAL	2	1	50	3	0	0	11	5	46	9	4	44

Article/Preposition Miscues

Miscues involving articles with prepositions occur in all three texts but without great frequency. This is shown in Table 14. In the readings of S44 and S51 they are more likely to involve A than THE. In S53 they involve A and THE in similar numbers, probably A is relatively more common in S53. Several prepositions are involved, more or less in proportion to their occurrence in the text. Like the miscues involving conjunctions, these miscues seem to involve the coincidence of prepositions occurring where noun phrases might be expected. Here are examples:

```
                                    THE(3)
S51 503...was always tinkering WITH clocks in Switzerland

    604                                                a ruler, a
                  A(3)
    605   coil  OF copper wire, a small bulb,

                              THE(4, 1 corr.)
    724 .... dancing about WITH excitement.

                        AT(5,2 corr.)
S53 528 He's home A lot.
```

Words which are prepositions are also used as verb particles. TO often introduces infinitives. Here are two examples from S53 which show the readers' involvement with the TO of the infinitive:

```
                A(4, 2 corr.)
 205 ...has TO work off steam somehow.

                         TO, SOME, THE, 0
 219-20 ...they do have A soothing sound.
```

Another example occurs in S44:

```
 402                        She suddenly wanted
     TO(7, 1 corr.)
 403 A drink and ran into the house.
```

As expected, considering how syntax and meaning are likely to be disrupted, there is a relatively high rate of correction for these miscues involving prepositions.

Articles and prepositions are both categories involving small words. That similarity may contribute to this type of miscue. If it were an important factor, such miscues would be far more numerous, however.

Table 14
Substitution, Omission and Insertion of Articles: Frequency and Percent of Correction

Word	For THE			By THE			For A			By A		
	f	c	%	f	c	%	f	c	%	f	c	%
S44												
Subst.	48	17	35	93	32	34	33	8	24	26	11	42
Omis.	13	1	8				6	2	33			
Insert.				9	1	11				7	1	14
Total	61	18	30	102	33	32	39	10	26	33	12	36
S51												
Subst.	112	25	22	165	37	22	79	13	16	72	16	22
Omis.	31	3	10				33	6	18			
Insert.				27	3	11				17	3	18
Total	143	28	20	192	40	21	112	19	17	99	19	19
S53												
Subst.	147	36	25	206	48	23	108	25	23	135	34	25
Omis.	41	5	12				39	9	23			
Insert.				38	0	0				34	3	9
Total	188	41	22	244	48	20	147	34	23	169	37	22

Table 14 shows data on omission and insertion of articles. As indicated earlier, English noun phrases may have null determiners: the absence of a determiner is itself part of the system indicating whether noun phrases are general or specific, definite or indefinite. So insertions and omissions could be regarded as substitutions involving interactions with the null forms.

One type of insertion involves a shift from generic mass nouns to specific singular count nouns:

S53 A(3) A(3)
... of / copper wire and / tape

Opposite shifts from specific count to generic mass involve some omissions:

S44 0
on A rock ...

S51 0 0(3,1 corr.)
not so bad with THE light. He tied A string ...

Here's *an example of a shift from* specific mass to generic mass:

```
          Ø
S44 on THE grass
```

At the beginning of S53 BABY-SITTING occurs as a mass noun with a null determiner in two successive sentences. Subjects have some difficulty dealing with it. Eight insert A in the first instance and three in the following one producing indefinite singular count nouns.

Another type of insertion of the article occurs in idioms where common nouns have null determiners:

```
    S51   THE(4, 2 corr.)      THE(4, 2 corr.)   THE(3), A
... parts in / place  ..taped it in / place    in /place

    S53     THE(3)                                THE(6)
         in / front of him   ...the babies in  / town
```

An opposite example occurs in S53:

```
                                  Ø
 311 It's just 3 blocks from THE school
```

Plural indefinites can become definite with insertion of THE:

```
 S44                  THE(2)        THE
 208  There will be / prizes for / children who take ...
```

Conversely plural definites can be indefinite with omission of THE:

```
    S51                  Ø (2)
    509 Just as he got THE parts ...

    S53                 Ø(3), A (1 corr.), HIS (1)
    709 He seemed to like THE history lessons too ...
```

A number of omissions of articles occur preceding adjectives in noun phrases following a copula. These appear to be anticipation that the adjective is a predicate adjective modifying the subject:

```
S51           Ø(6)                              Ø(3, 2 corr)
311...who was A real chemist  324 must have been A terrible

   S53          Ø(3, 1 corr.)              Ø(4)
   318 ... was A very busy man.  319 I'm A very busy man,
```

Plurals often take null determiners. Transforming plural nouns to singulars usually requires insertion of an article and dropping the plural suffix. The protocols show some examples:

S44 A PRIZE/PRIZES A PICTURE/PICTURES (In 2 locations)

THE CLASS(2)
S53 A CLASS(3)
310 ... soon as classes let out for lunch

One other type of article insertion transforms a proper noun to a common noun phrase. That would be unlikely except in the special uses of basal readers. The name of the kitten in S44 is Kitten Jones. The readers produce shifts like the one above where THE replaced BUT before Kitten and this insertion:

THE (1 corr)
405 / Kitten had been playing ...

As Table 14 shows, there are low rates of corrections on article insertions, 0-18%, on the three stories, and average rates on the article omission miscues. That reflects the phenomena involved in these two miscue types. Correction rates for all substitution miscues involving articles are a bit above average, particularly for S44. This latter may reflect high correction rates for the higher proportion of miscellaneous, "other" miscues in S44.

In early research on errors in reading, the researchers were perplexed by the omission and insertion of words as common as A and THE. They tended to regard such errors as reflecting careless or overly rapid reading. The examples and data from this study indicate, that these miscues represent all of the phenomena we would expect to find as readers transact with texts, given the role that articles play in English noun phrases and the active use of null determiners in the noun phrase system.

About THIS, THAT, THESE and THOSE, and THAT and THAT

THIS, THAT, THESE and THOSE occur, as was indicated above, as deictic determiners in the three texts. They are deictic in the sense that they point at something in the text or in the situational context.

They also occur as pronouns since the noun phrases in which they occur may be reduced and the noun deleted in the surface structure. Besides that, THAT may occur as a relative pronoun(...a mixture THAT would change the world.) or as a subordinate conjunction (he thought THAT a scientist's life...). Figure 2 shows a short passage from S53 that illustrates some of the deictic determiner uses:

Figure 2 Deictics: An Exemplary Passage from S53

```
                          THAT(2), WANT(corr.)
802              Do you know WHAT he just said?

                       Ø                  THE(14, 1 Uns. Corr.)
803 "Never mind THAT," he said. "Bring THAT fine boy over

804 here right away. We're setting up lights and cameras."

805 "But Mr. Barnaby," I said, "Andrew just ..."

           THE(12)
806 "Get THAT baby over here! he shouted. I'm a very

807 busy man."

808 On the way to the station I kept telling my parents what

809 had happened. "We've got to tell Mr. Barnaby," I

          THE(5, 1 corr.) THAT
810 said. "THIS baby isn't typical."
```

In this passage, THAT occurs once in a pronoun position (Never mind THAT) with the reference being to the precocious behavior of the baby, Andrew, just discussed previously but not nominalized previously. There is only one miscue, an omission which, in this idiomatic context, doesn't affect the meaning.

The other two uses of THAT and the one use of THIS are in determiner positions before BABY or its contextual synonym BOY. As was discussed earlier, these uses point up the importance of the baby more than they point to it. The major miscue in these three deictic occurrences is substitution of THE, the definite article. With a total of 31 such substitutions in the three instances there is only one correction and one unsuccessful correction. That's because there is no shift in grammar and the meaning shift is very slight. A small degree of pragmatic emphasis is lost. On line 810 there is a switch of THAT for THIS probably because of the prior uses of THAT but also demonstrating that THAT and THIS do not sharply contrast in meaning unless two different objects are referred to. In this case THAT baby and THIS baby are the same baby and the contrast is in the speaker's perspective.

There are two points in this text passage where THAT is substituted for WHAT. In line 802 2 subjects do so while in line 808 7 make the switch with 3 correcting. The higher rate of correction on the latter may be due to WHAT being the last word on the line with readers predicting a fuller "telling" and correcting when that doesn't happen.

These examples demonstrate strongly once again how general features of determiner occurrence are strongly constrained by the features of the specific text sequence. When THAT is acting as a pronoun, substitutions of THE would not be acceptable since articles are one type of determiner that cannot stand for the whole noun phrase. But when THAT and THIS occur as determiners in definite noun phrases substitution of the definite article is likely, particularly where the deictic function is subtle.

The substitution in this passage of THAT for WHAT is because THAT may occur as a relative pronoun or a conjunction in a similar sentence position. One might expect, then, that readers would find THAT ambiguous and that their miscues would reflect uncertainty about whether THAT is functioning as a conjunction or determiner. Such is not however the case. Miscues show the readers operating in most instances with a strong sense of the particular grammatical function of THAT.

THAT as Conjunction (Clause Marker) and Relative Pronoun

THAT does not occur as a conjunction or relative pronoun in S44. But the fourth and sixth grade subjects treat THAT very differently when it occurs as a conjunction or relative pronoun than when it occurs as a determiner or a pronoun. In S51, when THAT occurs as a conjunction there are the following substitutions:

WHAT (3), HOW (1), THE(3, all corr.)

For THAT as a relative pronoun there are these substitutions:

WHAT (4), WHERE(1, corr.), THIS(1), THAT'S (1), IT (2, both corr.) THEN, TO, WE.

In S53, there are the following substitutions for THAT as a relative:

And(3), TO(1), WHEN,

As a conjunction there are these:

THE(7, 1 corr.), WHAT, THERE.

THAT is also substituted for WHAT 14 times with 3 corrections in S53. It is also substituted for THEN(3, 1 corr), WHEN, YOU, and THERE.

Examples of miscues on THAT as a conjunction:

Ø, WHAT
S51 217-8 Sometimes he thought THAT a scientist's life ...

WHAT, HOW, THE(1,1)
322 ..Freddie knew THAT his mother would say,..

WHAT THE(1,1)
324 Freddie knew THAT Uncle Oscar must have been ...

Miscues on THAT as a relative pronoun:

WHAT, Ø
S51 224 might discover a mixture THAT would change the world

WHAT
226 ..Freddie made a mixture THAT was dark and cloudy.

Ø, WHERE(1,corr.)
313 Freddie's next experiment was in a field THAT had ...

THIS, THAT'S, THEN, WHAT(2,1 corr.)
WE, IT(1, corr.)
804-5 make some allowance for experiments THAT do not ...

These examples show a strong tendency for readers to substitute other conjoining and clause marking elements with few articles or other determiners.

S53 shows the one example cited earlier of a clause marker THAT with six substitutions of THE:

THE(6),Ø
702 I even found THAT studying made the time go faster

The sentence is in fact ambiguous. THAT STUDYING could be a definite noun phrase with THAT the deictic linking the phrase to previously discussed STUDYING. The fact that all six readers who shifted to THE did not correct supports the contention that they made THAT a determiner here.

All three insertions of THAT in S51 are as conjunctions:

THAT
304-5 I thought / the refrigerator would explode.

THAT
504-5 ..I wish / you didn't want to be a scientist.

THAT
518-9 He knew / this could become a serious matter.

Four of the 5 insertions of THAT in S53 are also conjunctions:

THAT
516-7 "We could take some moving pictures of him / when he's at his best.

THAT(2)
701-2 I read a lot so / the time would go faster.

THAT
811 I never thought / he was typical.

THAT
820 I still thought / we should tell Mr. Barnaby,...

Each of these insertions except THAT in S53 on line 517 is of an optional conjunctive element that the author deleted. Even the deep grammatical structure is not changed by the insertion of THAT. Even in line 517 it is obvious that the reader was anticipating a relative clause starting with THAT which would indicate something about the moving pictures.

If readers insert optional THAT conjunctions, it would be logical to expect examples of omissions of THAT when the author has chosen to use it. Indeed there are these examples:

Ø
S51 217-8 Sometimes he thought THAT a scientist's life ...

Ø
S53 211-2 it wasn't Andrew's fault THAT I had to stay home

Ø
702-3 I even found THAT studying made the time go faster.

Ø(5, 1 corr.)
1119-20 I saw THAT my mother was smiling broadly.

These omissions show, just as the insertions do, that the readers are constructing the text using the same rules as the authors. They are not simply reading words, they're using syntactic and pragmatic rules to make sense of the text.

There are some omissions of THAT as the relative pronoun when it is not optional:

Ø
313-4 ... was in a field THAT had nothing to do with chemistry.

Ø(2)
816-7 she said something THAT made Freddie feel fine all over.

Deictics as Determiners

In contrast, when THAT occurs as a determiner or deictic pronoun the substitutions look very much like the article miscues. The most common substitution for both THAT and THIS in S44 is THE. After that in frequency comes interchanges of deictics for deictics, e.g. THIS/THAT.

Examples of Deictic Determiner Miscues:

S44

THESE PICTURES
THE(5, 1 corr.) THAT,
412-3 you've done something to THIS PICTURE...

THESE PICTURES
602 ... THIS PICTURE of Kitten.

THAT, THE(1, corr.)
706-7 Kitten Jones shall receive THIS bell to wear.

THEIR, THESE(3)
209-10 You should see THOSE prizes!

S51

THE(6, 3 corr.), AT, THEN
301 Later THAT day ...

THAT(1, corr.) HIS
315 didn't ring THIS morning

ITS,THAT (1, corr.)
THE(8, 2corr), HIS(5, 1 corr.)
321 There was one thing wrong with THIS dream.

A, THAT, THE(3) HIS
705-6 "I'm going to drop THIS light down to you...

THESE, WHOSE
723 .. with THOSE things?

S53(In addition to exemplary passage above)

THE(13, 4 corr.) A(2) Ø(1)
612-3 "Be at the station with THAT fine baby a week ...

These examples of miscues on deictic determiners show the strong

tendency to stay within determiners in making substitutions. Use of THE is a shift to the definite article and maintains the information as given. In all three texts there are only a small number of shifts from deictics to A which would make the noun phrase indefinite and the information new.

Shifts from deictic to deictic also maintain the noun phrases as definite and the information given. The examples above of shifts between THIS and THAT and between THESE and THOSE seem to occur most often when the contrast between their near/far function is minimal and meaning is not affected. On line 315 in S51 the shift from THIS morning to THAT morning makes a difference to the meaning and it is corrected.

There are a few example were there is a shift in number accompanying substitution of THESE for THIS. In each case the following noun is also pluralized. Some examples were shown earlier involving articles. If English were as highly inflected as Spanish and some other languages, it is likely that there would be more such complex miscues involving consistent changes in the forms and endings of all the words in noun phrases. Some evidence exists that this is true of miscues in other languages. Barrera reports these Spanish miscues(Barrera, 1980, p.5)

OR	EL ARBOL	UNA VEZ	SU PADRE	SUS VACACIONES
ER	LOS ARBOLES	UNAS VECES	SUS PADRES	SU VACACION

Some of the examples above show possessive pronouns being substituted for deictic determiners. Again these maintain cohesion while making reference more specific. A particularly good example is line 321 of S51 where 5 readers shift from THIS dream to HIS dream. They've increased cohesion in the process by making more explicit who is doing the dreaming. On the other hand, 8 readers substitute THE for THIS going to the more general definite article. The shifts in both directions may derive from the pragmatics of using DREAM to nominalize what has been several lines of text representation of an imagined chain of events.

Miscues on Deictics as Pronouns

Deictics also occur in the 3 texts in pronoun positions representing the deep structure noun phrase but with the head noun deleted. Here are some examples of miscues on these deictic pronouns:

S44

THEM(1, corr.) , THESE(4)

215-16 "I would like to win one of THOSE."

S51

THINGS(1, corr.)

227-8 I'll keep THIS for a while.

SHE(1, corr.)
303 THIS is what she told her husband.

THIS(2, 1 corr.) THAT'S(1, corr.) WHEN
411 THAT wasn't the school bell ...

THAT'S (2)
WHAT CAN IT BE?
414-5 THAT CAN'T BE!

HIS(8, 5 corr.), THAT
518-9 He knew THIS could become a serious matter.

Ø THE(2/1)
721 "Now what's all THIS about, Elizabeth?"..

HE WAS(2), Ø(1, corr.)
HIS(4, 2 corr.)
804 "After THIS WE must make some allowance...

S53

226 I don't know about THAT,..(No Miscues).

WHAT(2, 2 corr.)
307-8 And not only THAT, but you may be a ....

THAT'S(5,2 corr.) IT(2,2 corr.)
WHAT(2, corr.) THIS(1, uns.corr.)
323-4 I want to sell my little brother. THAT is-- I ...

These miscues when the deictics occur in pronoun positions show another pattern. Nominative and objective pronouns appear since those are the functions of the deictic pronouns. WHAT appears in some examples as a substitute for THAT. Such miscues are often corrected. Both WHAT and THAT can appear in similar positions but what follows them is likely to be syntactically different.

Other deictics are substituted for deictics, THESE for THOSE, THIS for THAT, THAT for THIS which is understandable since they can assume the same pronoun function. Article substitutions are rare in these pronoun positions because articles can't assume the pronoun function of the noun phrase.

There are two examples from S51, above that show multiple substitutions of HIS for THIS. The particular text is causing the readers to expect a noun phrase introduced by a possessive. In both cases there is a high degree of correction, over half for the two examples.

Another example of several subjects making identical miscues in response to specific text features is this one from S53:

THAN(6, 4 corr.) THE(1, corr.)
215 They impress my mind better THAT way.

The strong expectation of readers that THAN will follow BETTER is enhanced by THAT, which is similar looking, actually following. But most correct when their expectation is disconfirmed.

A Few More Determiners

A few other words function as determiners in the three texts. They are not very frequent but the pattern of miscues on them is consistent with the other determiner miscue patterns.

In S44 there are these miscues:

ER: OR

ANY: ANYTHING(2)

EVERY: EVEN(1, corr.) VERY(2,2 corr.) EACH,THE, EVER(3)

There are some related pronouns:

ANYTHING: NOTHING

EVERYONE: EACH ONE, ANYONE

EVERYWHERE: ANYWAY, EVERYONE, EACH WHERE, WHERE(corr.) VERY WELL(corr.)

S51

ER: OR

EACH: THIS. IN(corr.)

SOME: A, SMALL, SOMETHING(corr.), Ø

Pronouns:

SOMETHING(2): SOMETIME(5, 2 corr.), THINKING, SOMETIMES(2), NOTHING, Ø

SOMETIMES(3): SOMETIME(17), SOMETHING(6, 2 corr.), SOMETHINGS(2, 2 corr.) TIMES(1, corr.)

SOMEWHERE: HIMSELF

S53

ER: OR

EACH: IN (corr.), WHICH (corr.)

EVERY: Ø(2, 2 corr.), EACH (corr.)

SOME(3): SOMETHING, SOMEONE(2, 2 corr.), MORE, OUT, ME(corr.), ON(corr.), THE

Pronouns

ANYONE: ANY (2,1 corr.), ANOTHER ONE (unsucc. corr.)

ANYTHING: ANY

ANYWAY: AWAY(3, 1 corr.), EVERYONE

EVERYBODY(2): ANYBODY(3), EVERY DAY, EVERYONE, EVERYTHING, SOMETHING(corr.), EVERYBODY'S(2) EVERY, YOU(corr.)

EVERYONE(2): ANYONE(9, 3 corr.), SOMEONE, ENOUGH(corr.)

EVERYWHERE: VERY(corr.)

SOMETIMES: SOMETIME(5), SOMETHING(3)

These determiners and related pronouns show the same narrow constraints the other determiners show. ANY, EVERY, and SOME are treated by the readers as having common syntactic and semantic constraints both as determiners and as parts of compound general pronouns.

General Conclusions:

This study of miscues on determiners of average second, fourth, and sixth grade pupils each reading a story designated for their grade level shows the transactional nature of the reading process. The miscues are strongly constrained by both the general functions of the determiners and their specific functions in particular text sequences. At the same time the miscues show the readers effective control of the syntactic, semantic and pragmatic rules for the use of determiners and how determiners relate to noun phrases.

Distribution of Articles and other Determiners.

About 15% of running words in all three texts are common nouns. About half of these are preceded by articles. Some minor differences appear in distribution in the three stories but these seem to have more to do with text characteristics than anything having to do with the grade level of the story. S53 has an unusually low proportion of THE and high proportion of A as compared to these and other texts studied. That seems to relate to its first person narration and other stylistic features involved in using an unusual proportion of indefinite noun phrases which take A rather than the definite THE.

These three stories are all from the same controlled vocabulary basal reader series. Whatever was done to control their readability did not seem to make any notable difference to the range of use of determiners or the types of noun phrases in the texts. S44 had no uses of THAT as conjunction or relative pronoun. That may reflect some deliberate attempts to control clause and sentence complexity and length. But it had similar uses of THAT, THIS, and THESE as the other more advanced texts. Simply speaking what this all adds up to is that to create a cohesive, coherent, and comprehensible text one must use a considerable number and variety of noun phrases in ways that will involve the full range of the English determiner system. To make sense of such a text a reader must control that system whether that reader is in the second, fourth, or sixth grade.

Miscues on Determiners

If readers at all three grade levels must control the determiner system to make sense of the texts, then there should be similar patterns of miscues across the three grade groups and texts. Basically that's what the study showed.

On page 3, four questions were raised to be considered in this study. The findings will be discussed here in relation to each of those questions.

1. What relevant patterns of miscues do the readers of each text and of the three texts show?

Relevant and constrained are the words that describe the miscue patterns shown by the readers at all three grade levels in this study. Miscues on the text in general are 3 or 4 times as likely as they are on articles. The second graders show a somewhat higher rate of article miscues but they represent an even smaller proportion of total miscues since second graders had an appreciably higher rate of general miscues per hundred words than the fourth and sixth grade readers.

The subjects in this study represented eight populations (six at the second grade level) of American children of extremely varying linguistic backgrounds. Each group either spoke English as a second language or spoke a low status rural dialect of English. Yet the miscue patterns were so constrained and so similar across groups that there was no reason to separate the groups to compare miscue patterns.

This does not mean that there are no differences between English dialects in their use of determiners and no first language influences among our bilingual groups in reading English. We found a very few examples of use of ONE as an article by our pidgin speakers. There may have been an example or two of null articles used by Downeast Maine speakers in places other dialects couldn't use them. But the effects of such differences are so slight that it would take either many more subjects or many more texts or highly unusual texts (for example texts written in the dialect of one of our groups) to show these group differences in determiner use.

The important thing is that no strong deviant pattern of miscues unrelated to the structure of the English noun phrase or the determiner system showed for any of our linguistically diverse groups. They all reflected at least receptive control of the determiner system in their miscues. The miscue patterns they produce were narrowly limited to a small set of words substituted for or replaced by the articles and other determiners and very selective insertion and omission of determiners. Miscues on particular articles or other determiners in specific instances varied considerably from none to several different substitutions to identical miscues produced by several different readers. There is no way to explain these patterns except that they require strong control of the system.

Except for a very small number of miscellaneous miscues, all miscues on A/AN or THE fall into seven categories. Four of these are determiners. All are function words except pronouns. One thing this pattern demonstrates is that in miscue analysis as in all scientific inquiry what doesn't happen is as important as what does. Nouns,

verbs, adjectives, and adverbs are rarely ever switched with determiners. Such an overwhelming finding can't be accidental. It must reflect important constraints on the reading process.

Half or more of all the substitutions for and by articles are other determiners(including other articles). THE is more likely to replace A representing a shift from indefinite to definite noun phrase than vice-versa. Sixth grade readers of S53 showed an opposite pattern which probably reflects the unusual proportion of A to the THE in text. Possessives were more likely to be interchanged with THE than A and deictics were rarely involved in miscues with A. Both of these show a tendency to maintain the definite nature of the noun phrase.

There was a high rate of self-correction among the miscellaneous miscues that did not fit into the more common categories. In fact correction patterns for categories of article miscues followed closely the pattern that miscues are most likely to be corrected when they disrupt the meaning and/or syntax of the passage.

Article to article miscues are not random. They involve a shift between phoric and non-phoric noun phrases. Shifts from THE to A are often in cataphoric phrases where the noun phrase is not made definite until the modifier which follows. Shifts from A to THE are often in situations where the reader could assume a homophoric referent, one implicit in the situational context.

There are very few article/quantifier miscues partly due, probably, to the infrequency of quantifiers in these texts. There are more likely to be miscues where quantifiers occur with another determiner (i.e. THE TWO).

Article/possessive pronoun and article/deictic miscues basically make coreferences more or less explicit. Shifting from an article to a possessive pronoun increases cohesion and makes ownership, which may be implicit, more explicit. Conversely, shifts to the article from the possessive pronoun, seem to show the readers' inability to accept explicit ownership on the basis of their schemata. Deictics often have exophoric referents in the speech acts represented in direct quotation. Others are involved in special emphasis. Shifts to THE keeps the noun phrase definite while losing the pointing to or pointing up quality of the deictic. Rates of correction on both possessive and deictic involved miscues are highly variable depending on their effect on the meaningfulness of the text.

Pronoun, conjunction, and preposition miscues involving articles have a coincidental aspect to them, not in the sense that they are random, but in the sense that they occur at points in the texts where a pronoun or a conjunction or a preposition could occur which happens to be the same place where a reader might expect an article to occur. These then are pivotal points in the text where the syntax could go

in more than one direction. The miscues show the readers use of alternative predictions.

Miscues involving prepositions are not common. They seem always to be due to anticipation of an alternate syntactic pattern and they show high correction rates. Conjunction miscues also have this coincidental quality but their correction rate is more variable because substitution of a conjunction for a determiner at the beginning of a clause could produce an acceptable sequence with a null determiner.

Almost all miscues involving pronouns and articles occur in subject noun phrases. They often follow strong prior context or come before nominalized verbs. They involve both A and THE. More than half of the pronoun/article miscues are corrected.

Omissions and insertions of articles are more likely than with other text words. Since noun phrases may use null articles, omissions and insertions of THE and A/AN can be considered substitutions. They frequently change the definiteness, specificity or phoricity of the noun phrase. Corrections are lower than average for article insertions and average for omissions. That reflects the fact that the insertions are less likely to produce a sequence the reader finds unacceptable.

Miscues on THAT again illustrate the constraints on reader-text transactions. THAT, THIS, THESE, THOSE can occur as deictic determiners or as pronouns where the deictic is in the place of the whole noun phrase with the head noun omitted. But THAT can also occur as a subordinate conjunction or as a relative pronoun introducing a new clause. Patterns of miscues on deictics in determiner positions look very much like the article patterns. Patterns of miscues on the other functions look very different. And there are very few examples of miscues that seem to reflect uncertainty on the part of readers of which THAT is which. Insertions and omissions of THAT are almost all in positions where THAT is optional in the surface structure.

2. How do these patterns relate to syntactic, semantic, and pragmatic views of the referential functions of determiners?

The patterns of miscues summarized under question 1 are very much those we would have expected. They show the readers' use of syntactic, semantic, and pragmatic schemata as they transact with the published text. Some miscues show strong expectations of definite or indefinite noun phrases on the basis of the readers' own schemata; others show miscues reflective of strong syntactic patterns in the prior context. Others show the interplay of the text pragmatics and the readers' own values and beliefs. Whether a particular text instance produces no miscues at all or several identical miscues,

close examination reveals the patterns are predictable in terms of how the text and the readers use the determiner system. Considering the linguistic diversity and age range of our subjects, there is remarkably little in the entire range of article and other determiner miscues that can not be easily related to the syntactic, semantic, and pragmatic features of text transactions.

3. What do these patterns show about how readers process the relational aspects of noun phrases?

There should be no doubt from the patterns the subjects of this study have produced that they are dealing with the relational aspects of the noun phrases in the texts they're reading in pretty sophisticated ways. Noun phrases either present new information or provide readers with reminders that the information is presupposed to already be available to the reader. So the noun phrases are either phoric in the sense that they relate to information available elsewhere in the text or context or they are non-phoric. This difference will be indicated by the subtle difference between whether THE or A precedes a particular noun or whether there is no determiner at all in the noun phrase.

The patterns of miscues the readers have produced demonstrate that readers are not simply processing the published text linearly. If they were doing so miscues would be more evenly distributed across instances of articles and other determiners, correction patterns would not be so show such differences and anticipation of noun phrase structures would not be so evident. The readers are transacting with the text. They are constructing their own texts as they seek to construct meaning. And they are building reference and coreference into the readers' texts. Whether a phoric relationship is endophoric (to the text) or exophoric (to the context) the references and coreferences must be established in the readers' texts.

The noun phrases the readers are producing and their relations are not simply those of the published text. They are generated by the readers in transaction with the published text. A miscue that replaces THE with A is an indefinite noun phrase being used by the reader where the author has used a definite noun phrase. The phoric relation that the author has presupposed no longer exists in the readers' text. On the other hand, when a reader uses HIS in a noun phrase where the text has used THE, the reader is building more explicit cohesive information into the text.

In the process of transacting with the text the readers are building their own texts using resources from the published text and from themselves. The readers use their own linguistic, cultural and conceptual base. So the process in which the readers are engaged is very much like that of the original writer and the noun phrases are

generated in much the same way. The difference, and it is an important one, is that the readers have the published text and its characteristics as resources.

4. Are these patterns consistent with a transactional, psycholinguistically based theory of reading?

Readers, through their miscues, show anticipation of where the text is going, what the syntactic structures will be, where new information will be introduced and where old information will be presupposed or referenced. They construct texts consistent with their expectations but they continuously monitor themselves by checking the sensibility of the text they are constructing and by checking against the ensuing published text. When the text is unacceptable or disconfirmed by further transactions with the published text then the readers reprocess and reconstruct their text and the meaning they are building.

So the mismatches between the published and the readers' texts, which show as miscues, are windows on this constructive and reconstructive process. That's why the miscues on articles and other determiners show the narrow constraints they do. That's why several readers from diverse populations can produce identical miscues at one article occurrence and none at another. That's why so small a set of words in so few categories occur as substitutions for or by articles. That's why the miscues demonstrate the strong control our diverse second , fourth, and sixth graders have over the determiner and noun phrase systems of English.

Miscues on articles and other determiners have always been present within miscue data. But the reading process is exceedingly complex and general miscue patterns reflect this great complexity. Focussing on miscues on determiners shows more strikingly than general miscue analysis the transactional, psycholinguistic process at work. There is no way to account for the strength of the miscue patterns in a model that sees the reader processing each letter and word sequentially. This analysis shows that the process of reading must be a constructive one in which predicting, inferencing, sampling, confirming, and correcting strategies must be at work.

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Texts Analyzed

S44: Plowhead, R.G. "Kitten Jones," in BEYOND TREASURE VALLEY Editors, E.A. Betts and C.M.Welch, New York: American Book Company, 1965

S51: Moore,L. "Freddie Miller, Scientist," in ADVENTURES HERE AND THERE, Editors, E.A.Betts and C.M.Welch, New York: American Book Company, 1965.

S53: Hayes,W.D. "My Brother is a Genius," in ADVENTURES NOW AND THEN, Editors, E.A.Betts and C.M.Welch, New York: American Book Company, 1965.

APPENDIX

The Miscue Data Base

From our miscue data base we selected three stories used as common tasks across 8 linguistic population groups in a study reported in 1978. (Goodman and Goodman, 1978)

S44, Kitten Jones, was read by 24 second grade readers. S51, Freddie Miller, Scientist, was read by 32 fourth grade readers. S53, My Brother is a Genius, was read by 32 sixth graders. The stories are all from the same basal reader series and are designated for the approximate grade level of our subjects.

In each case, four readers from each population who were average for their grade and school were selected as subjects for the study.

The eight populations were:

Dialect Groups:	Bi-lingual Groups:
Appalachian(Tennessee)	Navajo(Arizona)*
Downeast (Maine)	Arab(Michigan)
Rural Black(Mississippi)	Spanish(Texas)
Pidgin(Hawaii)	Samoan(Hawaii)*

*These groups did not read S44.

In our past studies which focussed on readers we coded the first 50 non-dialect miscues for each subject for 26 variables. A miscue is any point in oral reading where the observed response(OR) does not match the expected response (ER). Identical miscues at several text addresses were counted only the first time they occurred. In the current studies all miscues produced by all subjects were recoded for 4 variables: dialect, correction, syntactic acceptability and semantic acceptability.

Each text word or punctuation was assigned an address by page, line and item in the original format of the text as the subjects read it. Miscues were computer listed across subjects in address order. Our data, then, provides us with quantity and quality of miscues beginning at each text address as well as a complete listing of actual miscues at each text address. In addition miscues could be listing alphabetically by ER(expected response) or by OR (observed response). That way we could examine all miscues on a given word wherever it occurred in the text.

This study is near the naturalistic end of the research design continuum. Each subject read, orally, a complete text. The determiners are there because the authors, who had no part in the research, needed them or chose to use them in the writing. The texts have not been specially created or adapted for use in the research. They are from basal readers which means they have been edited, but the editing had no discernable intentional relationship to the text

features under study.

Though we report quantitative data in this article, our ultimate focus is on examining text comprehension by understanding readers' transactions with determiner structures in the three texts.

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